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ABSTRACT

This paper describes a project in which teacher education students were paired with practicing teachers for a semester-long e-mail conversation about classroom accommodations for students with learning disabilities (LD). The objective of the project was to enable undergraduate teacher education students planning to teach students with learning disabilities to share online questions and comments with practicing teachers experienced in working with these students. The project was successful in creating an online community in which students gather firsthand knowledge from teacher mentors, and the teachers contribute to the training of their student partners. Both students and teachers responded enthusiastically to the project on follow-up surveys and student reports. Qualitative analysis of conversation printouts and case study reports indicated that valuable learning occurs at both ends of the conversations. Most conversations took on a very personal flavor, and topics discussed included both the "assigned" topic and others of personal interest to the students. Students received a wealth of information on learning disabilities from their teacher partners, including both conceptual information about LD and information related to teaching strategies appropriate for students with LD. Extensions of the project are discussed. (Contains 20 references.) (Author/CR)

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First-Hand Knowledge of Learning Disabilities: Online Mentoring for Preservice Teachers

by

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Hallenbeck

RUNNING HEAD: Online Mentoring

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Abstract

This article describes a project in which teacher education students are paired with practicing teachers for a semester-long e-mail conversation about classroom accommodations for students with learning disabilities (LD). The project has been successful in creating an online community in which students gather firsthand knowledge from teacher mentors, and the teachers contribute to the training of their student partners. Both students and teachers respond enthusiastically to the project on follow-up surveys and student reports. Qualitative analysis of conversation printouts and case study reports indicates that valuable learning occurs at both ends of the conversations. Most conversations take on a very personal flavor, and topics discussed include both the "assigned" topic and others of personal interest to the students. Extensions of the project are discussed.

Teacher educators and classroom teachers have long recognized the importance of uniting research and practice in both the preparation of preservice teachers and the professional development of practicing teachers. Continuing efforts to improve instructional practice and student outcomes, as well as expanded efforts to serve students with learning disabilities (LD) in regular classrooms, highlight the need to provide both teacher trainees and classroom teachers with opportunities to explore best teaching practice and to reflect on their own perceptions of LD.

Both apprentice and practicing teachers benefit from opportunities to share questions and perspectives about classroom practice. Preservice teachers learn from the first-hand experience of practicing teachers and have a chance to "reality test" ideas presented in the college classroom. Practicing teachers find their years of classroom experience validated through their mentoring role, and they have a chance to reflect on their own perspectives in light of those of the students.

ONLINE APPRENTICESHIPS

Student teaching and practicum experiences continue to serve as the primary vehicles for teaching apprenticeships. However, several recent projects have employed computer technology to provide opportunities for extended contacts between various members of the education community. Computers, being two-way communication devices, offer a "highly interactive mode of situated learning which emphasizes insight development, reflection, and discussion" (Valde, Bower, & Thomas, 1996, p. 84). Moreover, electronic environments can "provide models for the kind of learning communities our students will establish as they become teachers" (Leach, 1996, p. 71). One major advantage of the

apprenticeship format, be it face-to-face or "virtual," is that "because learning is within the context of its eventual use, the problem of knowledge transfer and skills is minimized" (Levin, Waugh, Brown, & Clift, 1994, p. 150).

Classroom-Based Models

The proliferation of computers and e-mail access at both the K-12 and postsecondary levels has spawned numerous online projects involving both inservice and preservice teachers. Classroom-based online projects have taken several forms. Numerous projects have involved student teachers communicating with each other and with classroom teachers and university supervisors (Leach, 1996; Casey, 1994; Wolffe & McMullen, 1996; Levin, et al., 1994; Clarken, 1993; O'Neill, 1996). Other projects have provided online mentoring to first-year teachers (Merseth, 1991; Rogan, 1997; Clarken, 1993) or online communication to inservice teachers (Brush, Knapczyk, & Hubbard, 1993). Teachers have corresponded with graduate students (Tannehill, Berkowitz, & Lamaster, 1995), pen-pal projects have been established between classrooms (Peha, 1995; Allen, 1995), and university faculty and classroom teachers have engaged in online collaborations (Whitaker & Hill, 1996; Sunal, Scheffler, & Sunal, 1995).

Preservice Models

Teacher education programs have developed numerous ways of incorporating online technology into the training of preservice teachers. Distance learning courses are quite common (e.g., Brush, et al., 1993; Campbell & Zhao, 1996; Levin, et al., 1994), and teacher educators often include online projects in their courses (e.g., Wolffe & McMullen, 1996; Levin, et al., 1994). College students have engaged in online correspondences with

middle-school children (Allen, 1995), at-risk middle-school students (Lesesne, Buckman, Caves, & Day, 1997), and students in a self-contained class (Johnson, 1996). Listserves such as PRESTO enable prospective teachers and teacher educators to communicate about lesson plans, classroom management, educational philosophies, and other topics of interest (Thomas, Clift, & Sugimoto, 1996).

While student teachers and beginning teachers have engaged in several online mentoring projects, projects involving preservice teachers have tended to focus on the development of computer skills (Valde, et al., 1996) and on appreciating the implications of information technology on learning (Somekh, 1995). Few projects, however, have integrated online mentoring within teacher education coursework. Levin, et al. (1994) report on several models of "teaching teleapprenticeships" developed at the University of Illinois. These models included teleapprenticeships designed to supplement content and activities in methods courses; e-mail reflector lists enabled class members to share reflections, questions, and comments with each other and with the course instructors.

This paper reports on an online mentoring project whose focus centers on neither course content nor within-group reflection, but rather on personal conversations between preservice teachers and classroom teachers. The objective of the project is to enable undergraduate teacher education students planning to teach students with learning disabilities to share online questions and comments with practicing teachers experienced in working with these students.

A course on learning disabilities provides an ideal forum for an online apprenticeship. Students with LD represent the largest percentage of students served in special education programs, and virtually every classroom teacher works with these students. Furthermore, students with LD generally receive instruction from both general and special educators. Therefore, online mentoring during a course on learning disabilities enables college students interested in both general and special education placements to discuss a topic of common interest with practicing professionals in both areas of expertise.

ONLINE MENTORING PROJECT IN LEARNING DISABILITIES

Description

The project, which began in the fall of 1997, connects teacher education students via e-mail with classroom teachers in a semester-long conversation about classroom accommodations for students with learning disabilities. The course instructor supplies students with the names, teaching assignments, and e-mail addresses of the teacher volunteers at the beginning of the semester; each student then chooses the teacher with whom s/he wishes to correspond. Both general and special education teachers are included in order to provide multiple perspectives. Students choosing general education teachers are instructed to focus their conversations on accommodations these teachers use in their classrooms for students with LD. Those choosing special education teachers are instructed to center their conversations on ways in which the special educators assist their students with LD in regular education classes.

Students are urged to make approximately five e-mail contacts (including introductory and farewell messages) over the

course of the semester. Each student submits a reflective essay on the experience at the end of the semester and presents a brief reflection on her/his conversation to the entire class. Since the fall of 1998, each student also has arranged a two-to-three-hour observation in the classroom of his/her teacher partner.

Setting and Participants

The project was developed at a small private liberal arts college located in a medium-sized Midwestern city. Participants have included all students enrolled in two learning disabilities courses (an introductory course and a methods course) taught by the same instructor during the 1997-98 school year and all students enrolled in the introductory course since fall 1998. The introductory course, titled "Introduction to Learning and Language Disabilities," is offered during the fall and spring semesters; the advanced methods course, titled "Educating Children and Youth with Learning and Language Disabilities," is offered during the fall semester only. The introductory course is required for all special education majors and minors; the methods course is generally taken by students majoring in special education and related fields, such as psychology and social work. The vast majority of student participants are either elementary education, special education, or elementary education/special education double majors; the remaining students major in education of the deaf and hard of hearing, communication disorders, social work, and psychology.

Teacher participants include regular and special educators from two school districts near the college, one urban and the other rural. Many teachers participate every semester, while some "drop out" temporarily for various reasons (e.g., maternity leave,

changes in teaching assignment, inordinately busy schedules). Most teachers are recruited personally by the course instructor, although several have been recruited by other teacher participants.

Because of the large number of student participants during the inaugural semester (Fall 1997) and the relatively small number of initial teacher participants, members of the introductory course formed groups of 2-4 students, each group choosing one teacher with whom to correspond. Students in the smaller Fall 1997 methods course and all subsequent students in the introductory course have corresponded individually with a single teacher.

Evaluation

Results of the project were evaluated in four ways. First, students in the 1997-98 course sections anonymously completed a survey developed by the course instructor (see Table 1 below) at the end of the semester. Teacher participants during the Fall 1997 semester were asked to complete a similar survey (see Table 2 below) developed by the second and third authors; 13 of 17 surveys were returned. Teachers were asked to identify whether they had corresponded with a single student or with a group of students. The end-of-year time crunch precluded surveys from being distributed to the spring semester teacher participants. Beginning with the 1998-99 school year, student participants have answered a single question about the project on a more general end-of-course evaluation instrument.

Second, printouts of all 1997-98 e-mail messages were analyzed qualitatively. Data were coded inductively, beginning with the fall semester courses. Codes were refined and data were

recoded as needed, with the coding scheme stabilizing by the end of the fall semester conversations. Topic changes served as the unit of analysis; each topic was coded for content.

Third, students' written reflections were reviewed for personal comments about the project. Particular attention was paid to comments from the 1998-99 participants regarding their classroom observations.

Finally, in order to illuminate important personal aspects of the project from both the student and teacher perspective, two student-teacher pairs (the second and fifth authors and the third and fourth authors respectively) wrote case studies of their own participation during the first semester of the project. Each author wrote an individual reflection, then each pair combined their reflections into a single case study.

FINDINGS

First-Year Surveys

Both the student and teacher surveys completed during the first year required Likert scale-type responses along a five-point continuum. Space for additional comments was provided following each item; the survey concluded with space for additional comments. Results of the student and teacher appear in Tables 1 and 2 respectively.

Insert Tables 1 and 2 about here

Mean scores clearly indicate that the project was more successful when a teacher corresponded with a single student than when a teacher corresponded with a group of students. On nearly every question posed to both groups - teachers and students alike

- the mean score is roughly one point higher for those whose correspondence involved a single teacher and a single student. It would be tempting to conjecture that the difference between the two courses in the fall was due primarily to the relative experience of the students (introductory vs. advanced) were it not for the spring semester results from the introductory class, which more closely match those of the fall semester advanced course than the fall semester introductory course.

Students corresponding individually with a teacher found the project to be more helpful than those corresponding as a group, both in developing insights into teaching students with LD and in assembling a collection of effective classroom accommodations. This distinction carried over into the class presentations, with the individual corresponders finding these to be more helpful than the group corresponders. It appears that the personal nature of an individual correspondence generated both a more productive dialogue and a more positive attitude about the project.

Students' written comments helped illuminate their survey responses. "Any time you can visit with a professional in the field it is beneficial," said one. Several students noted that they had learned more about the realities of teaching: "It helped me to realize that it isn't easy, but can be rewarding." Students appreciated hearing about teaching strategies from practicing teachers: "The teacher went into detail on questions and all information was helpful because it had been tried and used." Comments about the sessions in which students shared their findings in class generally were quite positive. "By listening to the other presentations I gained some real interesting insights from the elementary teachers vs. SPED vs. high school," one

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student wrote. Another noted, "It made me more aware of the issues facing teachers and served to reduce our isolation from that, here in college."

When asked for additional comments on the 1997-98 surveys regarding the strengths and weaknesses of the project, comments about strengths outnumbered those about weaknesses by about three to one. One student wrote, "This project should happen in more education/special education classes." Another wrote, "I liked the wide range of teachers (age groups, different professions within education) that we were given." Some students, however, cautioned that care should be taken to select teachers with the time and commitment to respond. Others suggested that more attention be focused on matching students with teachers and that students be encouraged to correspond with teachers with whom they have had previous contact through practicum experiences. Numerous students suggested adding a classroom observation component to the project, which was done beginning in Fall 1998.

Of the teachers who returned the survey, those corresponding with individual students found the project to be more useful in terms of both validating and reflecting upon their own teaching practices than did those teachers corresponding with groups of students. Teachers corresponding with individual students were more likely to indicate that the students communicated their questions clearly; this might be due to difficulties experienced by groups of students, such as scheduling sessions to plan their correspondences, trading off correspondences, and differences of opinion about what should be asked. Furthermore, teachers corresponding with individual students indicated a higher level of interest in participating in the project again.

Second-Year Surveys

Student surveys during the second year of the project were much less elaborate, consisting of a single question on a more general end-of-course evaluation form. Results from the fall and spring courses are found in Table 3.

Insert Table 3 about here

The mean scores for both classes clearly indicate that the students found the project extremely valuable. As we shall discuss later, their written reflections revealed that the classroom observation was a very useful addition to the project.

Conversation Analysis

Each question or comment in the 1997-98 conversation printouts was coded to indicate the nature of the question or comment; a code was recorded each time a new comment or question was introduced. A total of 50 codes emerged from the 307 separate messages. The total number of occurrences of each of the 50 codes was tabulated for each contact initiated by both students and teachers. The most frequently occurring codes can be categorized under three general headings: *LD-Related, Personal Comments,* and *Related to General Education.* Five questions surfaced during the tabulation and analysis of these data: (1) To what extent did the students solicit and receive information on LD? (2) To what degree did the students stick to the subject? (3) Did the questions asked of general and special education teachers differ? (4) To what degree did the conversations take on a personal flavor? (5) Were there differences in the nature of group vs.

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individual participation in the introductory course? Each of these questions is discussed below.

Information About LD

We were interested in the degree to which the students utilized the project for its primary purpose - to solicit and receive information about learning disabilities. We totaled the questions and comments that were given LD-related codes for students and teachers separately, then divided each group's total by the total number of messages sent by that group. Students averaged 1.22 LD-related questions/comments per message, and teachers averaged 2.47. While a good deal of additional territory was covered in these messages, as we shall see, these averages indicate that LD-related information was featured prominently throughout the conversations. It should be noted that the instructor suggested that students write about five messages, including introductory and farewell messages; many of the introductory and farewell messages contained no questions or comments about LD, and including them in the totals tended to lower the averages. The 2:1 teacher:student ratio resulted from the fact that the teachers tended to provide elaborate responses to student questions, often providing multiple examples and comments.

Students received a wealth of information on learning disabilities from their teacher partners. This information can be categorized as either conceptual information about LD or information related to teaching strategies appropriate for students with LD. Table 4 lists topics from each of these two categories that were discussed during the 1997-98 e-mail conversations.

Insert Table 4 about here

Conversational Focus

A total of 515 student comments/questions centered on LD-related issues (35%), issues in special education (34%), and general education-related issues (31%). Students divided their inquiries and comments roughly evenly between those emphasized in the assignment guidelines (LD-related) and more broadly based educational issues (special education-related and general education-related). Thus it appears that students took advantage of the project to discuss with their teacher correspondents not only LD-related issues, but also issues of personal interest.

Questions for General and Special Educators

Table 5 depicts the pattern of student questions asked of both general and special educators. Again, we see that a large percentage of the questions that students asked of both special and general educators related to special education-related topics. Nearly half of the questions asked of special educators fell within this category, far surpassing the percentage of more specifically LD-related inquiries. This seems to indicate that preservice teachers are especially interested in the broad issues of working with special needs students. Their inquiries related to topics such as the following: curriculum, student learning characteristics, inclusion vs. pull-out instruction, peer relations, IEP's, assessment, labeling, collaboration, individualization, prereferral interventions, parental involvement, service delivery models, discipline, decision-making processes, classroom management, and transition. Not

surprisingly, a larger percentage of questions directed to general educators related to general teaching strategies and school procedures.

Insert Table 5 about here

Taking On a Personal Flavor

The conversations took on a decidedly personal flavor despite the relatively impersonal nature of e-mail. We tabulated the total number of "personal comments-related" codes from each student and teacher contact and divided by the total number of contacts, which resulted in an average of 3.47 such comments per message. The transcripts revealed that the students and teachers often made very close connections on both the personal and professional levels. They genuinely enjoyed sharing their questions and perspectives with one another, and frequently they discussed topics of a personal nature that were completely unrelated to the project.

Opening exchanges often included reviews of the student's and the teacher's professional background and preparation. Students listed their majors and often included brief descriptions of field experiences; teachers discussed their degrees and teacher preparation programs. Some teachers added initial reflections on teaching (e.g., "I remember being so excited and anxious to get out there and TEACH! It's everything you hope and think it will be."). Subsequent messages included frequent references to family matters, including hometowns, holiday plans, and siblings and children with disabilities. Some conversations included revelations of a very personal nature. For example, two teachers

shared their excitement over their current pregnancies; one student discussed the painful breakup of a relationship, while another shared the recent death of a close friend. Teachers and students alike sent school-related best wishes ("Good luck on your project and semester tests." "I hope your week is going great.")

The e-mail messages were sprinkled liberally with the same kinds of genial comments that characterize face-to-face conversations. Such comments included general greetings, comments from teachers hoping their information was helpful, students recognizing that teachers' schedules are very busy and expressing appreciation for their help with the project, and eagerness from both teachers and students to receive the next correspondence (From a student: "I hope I haven't overwhelmed you with so many questions about so many different topics. I am just incredibly interested to learn about your opinions and experiences." From a teacher: "Enough for now. Keep those cards and letters coming. Have a good week.").

As the conversations developed, teachers and students occasionally complimented one another's comments and questions. Teachers commented on students' insightful questions and comments ("I feel young again when I hear of your interest in education and helping our next generation." "It sounds like you have already had much experience with special education students, and it is nice to hear that your heart is in it. You are the type of person we need in special education." "You sound like a person who stops and reflects, not just reacts! I hope you stay with education; we need more reflective teachers in the classroom!!"). Students complimented teachers on their professional knowledge and dedication ("Whatever approach you use, I'm sure it's

wonderful...I've heard you're a wonderful teacher!" "I have heard about your wonderful teaching skills and I am excited to learn from you.")

On numerous occasions correspondents suggested extending their interactions beyond the boundaries of the project. Before it became a project requirement, students occasionally asked about visiting their mentors' classrooms ("I would love to come and visit your classroom sometime. I have never sat in on a high school level class before...If next fall would be better, that is fine."). Some suggested continuing the e-mail conversation after the project was completed ("I hope that we can continue this e-mail conversation when I get into some of the other Special Ed. classes." "I hope you have enjoyed this experience as much as I have. Feel free to e-mail if you are ever (in need of) learning a college student's point of view.") Occasionally a teacher suggested that the student consider a classroom visit ("If you ever get the chance..., you are welcome to come visit and see what we do. Just let me know."). As we have noted, a classroom observation was added in the second year of the project.

Group and Individual Contacts

Not surprisingly, the tenor of the conversations between individual correspondees differed from those involving a group of students corresponding with a single teacher. We were especially interested in both comments of a personal nature and those expressing enthusiasm for the project. We compared the average number of such comments in the messages from the fall introductory course, in which groups of students corresponded with individual teachers, with those from the spring introductory course, in which each student corresponded with one teacher. The results were

quite dramatic, as reflected in Table 6. The average number of personal and enthusiastic comments per message increased by a factor of 1.66 for the students and 1.80 for the teachers when the conversations changed from group (fall class) to individual (spring class). In both classes, the students made more personal and enthusiastic comments than did the teachers. This is not surprising, since it was the students' responsibility to maintain the conversations; furthermore, the busy life of a classroom teacher probably generates a slightly more business-like participation mode. Clearly, both students and teachers corresponded on a more personal level when each student was paired with one teacher.

Insert Table 6 about here

The students took to heart the course instructor's suggestion that they try to make approximately five contacts (including introductory and closing messages) with their teacher mentors. Of the 34 students or student groups participating across the three classes during 1997-98, 13 made exactly five contacts and 30 made between four and six contacts. This seemed to be an effective number of contacts; it did not appear to become burdensome for the participants, yet it enabled them to share an adequate amount of information over the course of the semester.

One Particularly Noteworthy Conversation

One conversation remarkable for both its depth and breadth occurred between a junior in the spring introductory class and her teacher correspondent, an elementary teacher; this conversation was analyzed separately from the others so as not to skew the

results. While the number of contacts in the other conversations across the three 1997-98 classes averaged 4.82 per student or student group and 3.85 per teacher, this conversation encompassed 14 student contacts and seven teacher contacts. Fully 36 of the 50 comment codes were represented at some point during the course of the conversation. Although the student and teacher had never met, their conversation revealed a remarkable sense of collegiality. The initial messages from both participants were characterized by the typical introductions and summaries of personal and professional background, although the student's first messages were more detailed than most and included a request to use information from her teacher partner in another course that required a teacher interview. The teacher enthusiastically agreed to help with the interview assignment, and her second message contained detailed responses to nine questions for the teacher interview assignment. She closed this message by inviting the student to visit her classroom; the student responded enthusiastically to the invitation and ultimately did visit the teacher's classroom later in the semester.

In subsequent messages both the student and the teacher shared additional personal information and engaged in a spirited give-and-take on issues involving both special education and teaching in general. The conversation eventually centered on issues related to special education in general and learning disabilities in particular. The teacher shared insights on effective teaching behaviors, multisensory instruction, classroom arrangement and decoration, accommodations for students with LD, collaboration with the resource room teacher, curriculum-based

assessment, standardized assessment, IEP's, and prereferral and referral procedures and outcomes.

Interspersed throughout the semester were discussions of the weather and recent personal and family events. These messages took on the characteristics of a freewheeling face-to-face conversation. The student closed the conversation by thanking her teacher partner for helping with not only the LD course but other courses as well. She concluded her written analysis with a comment about having "established a reputable personal and educational contact for the future." The student did indeed continue contact with her teacher mentor. The following January, while taking a practicum course in a resource room, she needed ideas for teaching multiplication and division facts to a student with LD. She e-mailed her teacher mentor once again for information on multiplication and division games she had seen in use during her earlier classroom visit; the teacher arranged to provide her with the necessary materials. Two years after their conversation began, the teacher and her student partner were still keeping in touch via e-mail.

Case Studies

This project offers professional development opportunities for both the students and their teacher colleagues. Case studies of the conversations between two pairs of authors of this paper illustrate the outcomes of these opportunities. Susan is a first-grade teacher; her student correspondent, Jody, was an elementary education major with a minor in special education. Sandy is a third-grade teacher; her student correspondent, Gwen, was an elementary education/special education double major. The

following case studies are organized around themes that emerged from their independent reflections.

Susan and Jody

Professional benefits

Susan. I was very eager and naive when I signed up for the e-mail project. I have been teaching primary elementary school for 12 years. I love to talk about teaching and my experiences, so I thought this would be a great chance to share with a FUTURE TEACHER. I really had no idea how it would cause me to think about MY teaching accommodations and philosophy. I wasn't just sharing what works and what doesn't work in my classroom with Jody, but rather really justifying to myself, and to her, how, what, and why I did the things I did in my classroom.

Jody asked me such detailed, thoughtful questions, I felt I owed it to myself and to her to make this a valuable experience for BOTH of us. I answered her questions as plainly and simply as I could, but teaching has so many variables. What works for one child is NOT necessarily going to work with another child. And what works for awhile might not work later on, and I found that hard to relate over e-mail. Nevertheless, putting my philosophies and ideas in writing caused me to pause and to be reflective about how I run my classroom and how I can BETTER serve the children in my care.

Jody. I learned how a classroom teacher accommodates the needs of students with learning disabilities, along with learning some additional teaching strategies. Susan and I both felt a connection toward our thoughts and ideas of teaching. As Susan shared her teaching accommodations, I began gaining more insights in meeting the needs of students with learning disabilities. I

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also began to see the connections between what Susan said and what I had seen while working in a resource room and regular classroom settings. I had learned a great deal in the LD classes, but also being able to correspond with a classroom teacher through e-mail helped make the connection between classroom learning and the realities of teaching even more meaningful and applicable. Corresponding over e-mail was like hands-on learning; what I was learning in my classes was being applied to my questions and the answers I received from Susan.

As regular elementary teachers, we both understand the importance of learning teaching strategies and accommodations for meeting the needs of students with learning disabilities. Not only will the students benefit, but we will have several teaching strategies which will allow for a wide variety of ways to teach a concept, skill, or lesson.

I was taking both the introductory and advanced LD courses. In the advanced course I corresponded with a teacher on an individual basis; in the introductory course I was involved in a group correspondence. I received a lot of information from both projects, but I gained more from the individual correspondence. My group members and I were able to come up with a list of questions that were of interest to us personally, but working in a group meant finding time when we could all meet, and that was not always easy to do. Corresponding with a classroom teacher on an individual basis allowed me to take my own time to sit and reflect on my questions and thoughts. Also, I was able to focus the e-mail project toward my own concerns and interests in teaching.

Convenience

Susan. I loved being able to connect with Jody through the e-mail at my convenience (within reason) and find out if I had answered her questions with answers that made sense and were what she was looking for. I didn't feel the pressure of a phone call waiting to be returned, and I felt like I could answer her when I had a couple of minutes here and there during my day, save it, and return when I had more time.

Jody. Corresponding through e-mail was convenient because it allowed me to write at my own time. This gave me time to reflect back on what I have seen out in classroom settings, what I have learned in my classes, and Susan's previous responses.

Personal Satisfaction

Susan. My reservations about this project only came AFTER I had been contacted by Jody. Would I be able to answer her questions intelligently? Would I find the time in my already stressful, event-filled day to write her back in a reasonable amount of time? Would I be able to validate some of the things she is being taught in college? The answer to all of these questions was YES. It took plenty of time and thought, but the project was even more beneficial for me, as a practicing teacher, than I ever imagined it could be.

I felt it was beneficial to have other teachers in my building also involved in this project. I appreciated hearing from them some of THEIR answers to the questions they were being asked. It was reassuring to know that many of us were excited about the chance to communicate with college students, but that it was difficult to put it all in writing.

I enjoyed the chance to share my experiences with Jody. I was relieved to find out that she had also felt a real benefit from the e-mail project. I feel a connection to Jody through this whole experience and the satisfaction of knowing that maybe in some small way, I have contributed to the success of a future teacher.

Jody. The correspondence helped me to gain confidence in my thoughts as a teacher and the teaching strategies that I would like to use in my classroom. Another insight that I gained was the personal reflections and emotions that Susan shared with me. After openly sharing our thoughts and feelings about teaching, I began to feel a connection with Susan because we shared similar feelings and beliefs on teaching.

Sandy and Gwen

Initial expectations

Sandy. I eagerly accepted the opportunity to participate in an e-mail correspondence project with an education student. Meeting the needs of all learners is a challenge and a goal for me each year. What an exciting experience this would be for me to share classroom accommodations and modifications with a future teacher. This is a wonderful way for the classroom teacher to feel connected with the undergraduate program for future educators. It seemed to make a lot of sense for educators working in the field to communicate with future educators about our responsibilities to our learners. I was equally eager to learn about current topics being taught in the teacher preparation courses at the college as well as to offer ideas to a future teacher.

Gwen. When the project was introduced in class, I was very excited to begin. I loved the idea of having the opportunity to be in contact with an educator currently working in the field. I am a little hesitant about going into the working field because I feel that I do not have enough information and background to handle all of the situations that will arise. So, through opportunities like this I have a chance to ask questions and get information on real classroom life.

Continuing the conversation

Sandy. I found each conversation with Gwen to be a learning experience. I recall a particular e-mail correspondence because it seemed to validate the material she was learning to my experience in applying the practice with special learners. Gwen had learned that special learners were at a great disadvantage if the skill was taught using manipulatives but manipulatives weren't allowed when taking an exam. I was able to share a personal experience with Gwen about this very topic. I had recently been helping my son with his math homework, which dealt with counting change. At home he learned the skills using real coins and was successful when doing this. At school, however, when the test was given he didn't pass that part of it. I asked his teacher if he had been able to use money when taking the test. She responded that he wasn't, but she was willing to apply the intervention on the test retake. He was 100% successful when he was allowed to use the manipulatives when retaking that part of the test. The theory behind using manipulatives with learners was validated with real classroom practice and student success.

Gwen. Being unfamiliar with the teacher, I did not know where to start for our first e-mail contact, so I relied on

information from a classroom intervention list that Sandy had provided the course instructor, and I applied that to the information I was currently learning in class. After the initial contact, I never ran out of questions to ask and methods of teaching to discuss. It was very easy and comfortable to discuss issues and concepts with Sandy. I relied on her to tell me the real story of her teaching experiences. After all, Sandy had been there and had experienced the ideas and concepts first hand. She was able to share the ideas that worked and those that didn't.

Summing up

Sandy. With a busy teaching schedule, I sometimes fail to take time to provide the necessary interventions in a child's learning. This project has provided me the opportunity to reflect on successful interventions that I've used with students in the past, as well as enabled me to rethink various tools special learners need to succeed. I think that connecting through e-mail was a wonderful way for the college student to gain valuable insights in meeting the needs of special learners. It was also rewarding for me to be able to make a difference in the preparation of a future classroom teacher, as well as to grow in my knowledge of adaptations and techniques for special learners with Gwen's classroom information.

Gwen. Sandy and I discussed many accommodations and methods of teaching that she uses in her classroom, including peer tutoring, cooperative learning, testing modifications, response cards, and many other topics. As a future special educator, I really appreciated this information. I know several of the concepts she shared will be found in my classroom in the future. This was an excellent learning experience. Not only did it give

me information on the current field of education as it applied to my classroom experience; it also gave me the opportunity to form a bond with a teacher in the field. I will depend on that bond long into the future to share current teaching ideas and concepts.

Classroom Observation

Both students and teachers recognized the value of face-to-face contact to supplement the online conversations. Since the second year of the project, student participants have been required to observe in the classrooms of their online mentors for 2-3 hours about half-way through the semester; observations are intended to inform subsequent online communications and to provide additional insights for the written analysis and classroom presentation. Including the observation component may help enable the students and their mentors to maintain contact over time, perhaps leading to later practicum or student teaching placements.

Students and teachers alike have been extremely enthusiastic about this addition to the project; the classroom observation generally becomes the main focus of students' class presentations and written analyses. The following excerpts from written analyses are typical:

> I thoroughly enjoyed my connection with Mrs. S. The observation was very powerful. I left there in tears because of the difference I could see that she made in their lives...This inspires my choice in careers and gives me a sense of being able to make a difference in a child's life. (Elementary resource room)

> I spent a lot of time visiting with the kids and got to know a little about them...They were so willing to help each

other. A couple of the kids had to leave for therapy and the others were asking to make flash cards for them. Some even pulled up chairs to help the ones that needed help. You can see that they don't think any less of kids for needing help or being different...I loved her class; they were so sweet and accepting of me. I also found it to be helpful because I got to see how she interacted with these students and how the other kids interacted with them. (First grade)

I really enjoyed participating in this e-mail project and it helped me to have a better understanding of the different ways in which people learn and also the ways that a lesson can be adapted. I think C.G. is an amazing teacher and she is definitely affecting the students in a positive way. I am thankful that I was able to get to know her and I feel privileged that I was able to learn from one of the best! (Third grade)

Mrs. R. does an excellent job at making sure that each and every student is aware of the fact that he or she is a valued member of the community. This setting is the best model of a full-inclusion classroom I have ever had the opportunity to observe. The students in Mrs. R's third grade are learning some very valuable life lessons. Because of the values that they are learning in an inclusive classroom, they will have the tools necessary to build an inclusive world. (Third grade)

As I left the school that morning, I was thinking about what a wonderful place the resource room was for each of the children. They were provided with a warm and secure place where they could excel in areas they normally wouldn't be able to in the regular education classroom. Each child seemed very happy and excited as they both entered and left the classroom. Mr. T. had a special touch that really worked well with the students...He was a wonderful model for anyone looking into teaching in a special education room as he demonstrated a lot of the techniques we have learned in class...I will never forget this experience as I prepare to work in the special education field. (Elementary resource room)

I had such a wonderful learning experience when I was in his classroom for the 3 hours that I was there. I had no idea that being a special education teacher consisted of so much activity, paper work, one on one help, and so much more. I also figured out that that is the kind of classroom that I want to have someday when I'm done with school. (Secondary resource room)

The most influential part of this project was the observation. Seeing a teacher in action with regular students and LD students made me want to jump out of my chair to help. (Fourth grade)

My two hours in an 8th grade classroom was an experience of its own. Since college, I have only been in elementary

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schools working with speech pathologists. It was a good reminder of how much attention and individual coaching each student needs, regardless if he/she has LD or not. (Eighth grade language arts)

(The project) gave me a chance to get a picture in my mind and then actually go and see the real thing. It also let me see that students with LD do not have to stick out in the classroom, they can be just as normal as any other child can. (Third grade)

I believe that this e-mail correspondence was a wonderful opportunity for me to apply what was being taught to a real classroom setting...It was great to have an opportunity to see the classroom that she worked with. It also made it easier to see the behaviors and skills exhibited in the classroom. This project was wonderful for application of the material covered in class. (First grade)

I really appreciated my experience with Mrs. R. Her classroom community is a very active environment and her students are polite and respectful to her and each other. Mrs. R. is a model of what it means to be a proactive teacher and I hope to affect students as much as she does. She is a very genuine person who is sensitive to the needs of the children in her classroom, and I hope I can do the same. (Fourth grade)

One student focused her attention during her observation on a particular fourth-grader, Andy, a very bright boy with a severe

learning disability. She took a keen interest in Andy, and her teacher mentor, Carol, suggested that she extend the classroom observation. The college student's written reflections reveal the unique importance of this opportunity.

> Carol recommended that Andy and I e-mail each other so I could get a better idea of his writing skills. For fifteen minutes out of his class time, Andy is allowed to write to me. His e-mails always bring a smile to my face. I also plan on going back to Carol's classroom every once in awhile--she said she would love my help and the kids are always excited to have an extra hand in the room.
>
> This e-mail project was a very valuable experience for me. I walked away with more information, ideas, and enthusiasm for teaching than I ever thought possible. The first-hand experience of observing Carol in action has reminded me how much I want to be that teacher who makes a difference in the classroom (italics in original).

DISCUSSION

The main purpose of this project is to create an online community (Casey, 1994) in which teacher education students and practicing teachers can explore together the realities of teaching students with learning disabilities. The project recognizes that "becoming a teacher is not a one-person act, but rather a process of increasing involvement in teaching communities" (Leach, 1996, p. 70). E-mail allows busy college students to pursue contacts with equally busy practicing educators in a way that maximizes convenience for all (Merseth, 1991; Wolffe & McMullen, 1996;

Levin, et al., 1994; Rogan, 1997; Johnson, 1996; Sache, Haines, & Robertson, 1993).

This project generates a good deal of conversation about not only the intended topic - classroom accommodations for students with LD - but also additional topics of professional and personal interest to the participants. Students find cyberspace to be a "safe, secure" environment for sharing questions, concerns, and ideas without fear of embarrassment or evaluation (Leach, 1996; Wolffe & McMullen, 1996; Rogan, 1997; Clarken, 1993). In most cases, the participants come to see one another as real people. Once the project is underway, they start expecting messages and become disappointed when they don't come (Johnson, 1996). The students, of course, recognize the project as a course requirement; however, the teachers also take the project very seriously and even occasionally contact the course instructor with questions or technical problems or to ask why they haven't received any messages for awhile.

It also is hoped that the project will help preservice teachers develop a vision for using computers in their classrooms (Valde, et. al., 1996) and for seeing computer networking as an avenue for professional development (Levin, et al., 1994) and moral support (Merseth, 1991). While the students certainly appear to sense the value of this use of technology, several mentioned during the first year of the project that the experience would have been even more valuable had they had the chance to meet face-to-face with their corresponding teachers (Leach, 1996; Lesesne, et al., 1997; Thomas, et al., 1996; Clarken, 1993). Several teachers also seemed to sense this limitation, as they invited their student partners to visit their classrooms. At

least two students did so before the end of the semester; one returned several times to help out. A classroom visit was added to the project requirements at the beginning of the second year.

Participation in the project seems to help lessen the isolation of the teachers (Tannehill, et. al., 1995; Leach, 1996; Merseth, 1991; Brush, et al., 1993; Whitaker & Hill, 1996; Casey, 1994). The culture of most schools offers few rewards to innovative teachers or, even more disturbingly, discourages innovation for fear that other teachers "will be expected to keep up" (Peha, 1995, p. 22). The teachers involved in this project, nevertheless, move beyond the confines of their classrooms and warmly embrace their role in the training of their student partners. The project has demonstrated, as Rogan (1997) has noted, that "many aspects of good teaching, such as engaging and inspiring students, will transfer to the online medium" (p. 12). Moreover, several teachers have mentioned during their correspondences that their online conversations provided them with an opportunity to reflect upon their own teaching practice (Rogan, 1997).

An online mentoring project such as the one described here is ideally suited for an introductory course. While the time requirement for both the students and teachers is not excessive, it is adequate to allow a meaningful conversation to unfold. The project serves as a "reality check" for what students are learning in their coursework; it offers them a chance to both converse with and observe a practicing teacher under nonthreatening, informal conditions.

CONCLUSION

Successes

The first two years of the online mentoring project were very successful. Students took advantage of the chance to engage in professional dialogue with classroom teachers. They learned more about the realities of teaching students with learning disabilities and had a chance to check out information discussed in their college courses with practicing teachers. The teachers took to heart their opportunity to assist in the training of preservice teachers by virtue of sharing their expertise. The project has helped push the thinking of both students and teachers, and has served as a catalyst for exploring numerous important instructional and philosophical issues. Students particularly appreciate the chance to get into classrooms and observe the teachers with whom they have been conversing; some of these college students often have their first opportunity to actually work with students with learning disabilities.

Difficulties

Despite its successes, the project is not without problems. Occasional technical difficulties in sending or receiving messages have created frustration and, particularly for the students, a certain amount of anxiety. (Most correspondents, however, roll with the punches, as exemplified by the teacher who wrote, "This is my second attempt at responding to your questions. My previous 'words of wisdom' froze up on me and I lost the message :-(Oh, well, life is like a kidney stone--this too shall pass.") Teachers sometimes are unable to respond as quickly, as often, or in as much detail as the students would like. Two of the teacher volunteers in the first year became so busy with other

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professional obligations that they were unable to maintain their e-mail conversations, forcing their student partners to switch to other teachers in midstream.

Improvements and Extensions

A few students have utilized the project to pursue topics from other courses with their corresponding teachers. Students might be encouraged to discuss specific topics explored in their methods courses with their corresponding teachers and to bring the teachers' ideas into discussions in the methods courses. However, students should be cautioned not to overburden their corresponding teachers or to stray too far from the prescribed topic.

A project such as this represents a significant commitment of time and energy on top of the already busy life of an accomplished teacher. College instructors implementing such a project should continuously expand their data base of interested teachers so a teacher can "drop out" for awhile without worrying about unduly crippling the project. Students should be given the opportunity to correspond with teachers with whom they are already familiar, perhaps from their hometowns, as several students in this project have done. Classroom observations back home can be arranged during college breaks.

Mentoring projects offer limited rewards for participating teachers (Clarken, 1993). The course instructor in this project sends a letter of thanks to each teacher mentor's principal, with a copy sent to the teacher; several teachers have expressed their appreciation for this gesture. Tangible incentives for teacher participants might include free or reduced tuition in college course(s) of their choosing or in course(s) specifically designed for them. Or a point system might be devised whereby

practitioners could receive graduate credit or tuition remission based upon the extent of their participation in this and other mentoring projects (e.g., practicum supervision or student teaching supervision). It might be possible to offer participating teachers graduate credit from the college/university, possibly including requirements such as online seminars, face-to-face meetings of participating teachers when possible, and/or reflective essays. Such cross-pollination between the college/university and practicing teachers would enrich the expertise of all concerned and would help diminish the often-cited chasm between professors and practitioners.

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TABLE 1
First-Year Student Survey Results

RESPONSE RANGE FOR ALL QUESTIONS

5	4	3	2	1
very helpful	somewhat helpful	neutral	not very helpful	not at all helpful

1. To what extent was the project helpful in developing insights into the realities of teaching students with learning disabilities?

Class	Format	n	Mean	Range
Intro. (fall)	Group	25	3.48	1-5
Advanced (fall)	Individual	9	4.22	3-5
Intro. (spring)	Individual	17	4.29	3-5

2. To what extent did the project help you assemble a collection of effective classroom accommodations for students with learning disabilities?

Class	Format	n	Mean	Range
Intro. (fall)	Group	25	3.52	1-5
Advanced (fall)	Individual	9	4.33	2-5
Intro. (spring)	Individual	17	3.76	2-5

3. To what extend did you find it helpful to share the results of your correspondence with the rest of the class and to learn about their findings?

Class	Format	n	Mean	Range
Intro. (fall)	Group	25	3.84	2-5
Advanced (fall)	Individual	9	4.44	4-5
Intro. (spring)	Individual	17	4.47	2-5

TABLE 2 First-Year Teacher Survey Results

5 very much	4 somewhat	3 neutral	2 not very much	1 not at all

1. To what extent did the college to classroom e-mail correspondence support and validate teaching ideas you shared with your college student(s)?

Class	Format	n	Mean	Range
Intro. (fall)	Group	3	3.33	1-5
Advanced (fall)	Individual	9	4.56	3-5

2. To what extent did the e-mail project help you to rethink interventions and teaching methods you use with your special needs students?

Class	Format	n	Mean	Range
Intro. (fall)	Group	3	3.33	3-4
Advanced (fall)	Individual	9	4.11	1-5

3. To what extent did you find it convenient to correspond with your college student(s) through the use of e-mail?

Class	Format	n	Mean	Range
Intro. (fall)	Group	3	4.00	2-5
Advanced (fall)	Individual	9	4.00	2-5

4. To what extent did the college student(s) with whom you corresponded clearly identify the information they were seeking?

Class	Format	n	Mean	Range
Intro. (fall)	Group	3	3.33	1-5
Advanced (fall)	Individual	9	4.89	4-5

5. Are you interested in participating in this project in the future?

Class	Format	n	Mean	Range
Intro. (fall)	Group	3	3.67	3-4
Advanced (fall)	Individual	9	4.44	2-5

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TABLE 3
Second-Year Student Survey Results

RESPONSE RANGE

5	4	3	2	1
very much	somewhat	neutral	not very much	not at all

Survey Item: The e-mail correspondence project helped develop my perspective on working with students with LD in the classroom.

Fall 1998
n = 16

Range	Mean with outlier ("1")	Mean without outlier
1-5	4.19	4.40

Spring 1999
n = 22

Range	Mean
3-5	4.41

TABLE 4
LD-Related Topics from Conversation Analysis

LD-RELATED CONCEPTS	
Diagnosis of LD and referral procedures	Collaboration between resource teachers and general educators
Teacher expectations and accommodations	Caseloads of students with LD
Learning characteristics	Disability awareness
Scheduling issues	Various resource room instructional models used with students with LD (e.g., tutoring, by-pass strategies, direct instruction, life skills)
Compensatory skills and talents	
Peer relationships	
Inclusion of students with LD	

STRATEGIES FOR STUDENTS WITH LD	
Hands-on/multisensory/ manipulative approaches	Testing accommodations
Use and development of study guides	Accommodations and medications for students with attention deficit disorders
Peer and cross-age tutoring	Review/reteaching approaches
Seating strategies	Assignment modifications
Student grouping strategies	Cognitive strategies (e.g., problem-solving, modeling, scaffolding)
Teaching strategies in specific skill areas (i.e., reading, writing, spelling, math)	By-pass strategies (e.g., note-taking scribe, tape recorder, ACT accommodations, computer software)
Behavioral approaches	Classroom management strategies
Organizational strategies	Alternative materials/curricula
Grading alternatives	Cooperative learning
Scheduling strategies	
Alternative assessments	

TABLE 5
Questions Asked of Special and General Educators

	Special Educators		General Educators	
Focus of question	n	Percent of Total	n	Percent of Total
LD teaching strategy	20	18.5%	74	25.6%
Learning disabilities (general)	17	15.7%	48	16.6%
Special education (general)	53	49.1%	62	21.5%
General teaching strategy	3	2.8%	48	16.6%
Teaching (general)	6	5.6%	42	14.5%
School procedures	9	5.0%	15	5.2%
Total	108		289	

TABLE 6
Average Number of Personal Comments
in Group and Individual Correspondences

Class	Students	Teachers
Fall introductory LD course (group)	3.38	1.92
Spring introductory LD course (individual)	5.61	3.46